CT-PPS Quartic Geant4 simulation tool \$Revision:\$

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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2 **Hierarchical Index**

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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Chapter 3

Class Documentation

3.1 ActionInitialization Class Reference

Inheritance diagram for ActionInitialization:



Public Member Functions

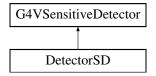
- · virtual void BuildForMaster () const
- virtual void Build () const

The documentation for this class was generated from the following file:

• sw/include/ActionInitialization.hh

3.2 DetectorSD Class Reference

Inheritance diagram for DetectorSD:



Public Member Functions

- **DetectorSD** (G4String)
- void Initialize (G4HCofThisEvent *)
- G4bool **ProcessHits** (G4Step *, G4TouchableHistory *)
- void EndOfEvent (G4HCofThisEvent *)

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The documentation for this class was generated from the following file:

· detectors/include/DetectorSD.hh

3.3 EventAction Class Reference

Inheritance diagram for EventAction:



Public Member Functions

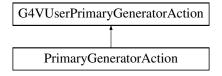
- void BeginOfEventAction (const G4Event *)
- void EndOfEventAction (const G4Event *)

The documentation for this class was generated from the following file:

• sw/include/EventAction.hh

3.4 PrimaryGeneratorAction Class Reference

Inheritance diagram for PrimaryGeneratorAction:



Public Member Functions

- void GeneratePrimaries (G4Event *)
- void SetOptPhotonPolar ()
- void SetOptPhotonPolar (G4double)
- G4bool SetInputROOTFile (G4String)
- G4bool ProbeOneCell (G4int, G4int, G4double)

3.4.1 Member Function Documentation

3.4.1.1 G4bool PrimaryGeneratorAction::SetInputROOTFile (G4String)

Sets the input ROOT file from which all simulated events are to be fetched in private attributes.

Parameters

in	filename	The ROOT file to open to fetch events

Returns

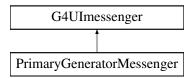
A boolean stating the success or failure of the TTree retrieval

The documentation for this class was generated from the following file:

• sw/include/PrimaryGeneratorAction.hh

3.5 PrimaryGeneratorMessenger Class Reference

Inheritance diagram for PrimaryGeneratorMessenger:



Public Member Functions

- PrimaryGeneratorMessenger (PrimaryGeneratorAction *)
- void SetNewValue (G4Ulcommand *, G4String)

The documentation for this class was generated from the following file:

· sw/include/PrimaryGeneratorMessenger.hh

3.6 QuartLAnalyzer Class Reference

#include <QuartLAnalyzer.hh>

Public Member Functions

• QuartLAnalyzer (G4String filename="events.root")

Default class constructor to book the TTree and its different leaves to store the information.

void AddHitInEvent (G4Step *step)

Add a new photon hit on the PMT in the events' collection.

• void FillTree ()

Fills all branches in the TTree for one given event.

• void Store ()

Store the TTree onto an external ROOT file.

• G4int GetNumHitsInEvent () const

3.6.1 Detailed Description

Analysis class intended to store into a TTree the photons kinematic information for each event.

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3.6.2 Constructor & Destructor Documentation

3.6.2.1 QuartLAnalyzer::QuartLAnalyzer (G4String filename = "events.root")

Default class constructor to book the TTree and its different leaves to store the information.

Parameters

in	filename	The file name to store the output tree.

3.6.3 Member Function Documentation

3.6.3.1 void QuartLAnalyzer::AddHitlnEvent (G4Step * step)

Add a new photon hit on the PMT in the events' collection.

Parameters

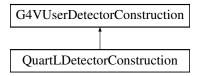
in	sten	The Geant4 iterative step from which the photon kinematics is extracted.
T11	Siep	The deality iterative step from which the photon kinematics is extracted.

The documentation for this class was generated from the following file:

· detectors/include/QuartLAnalyzer.hh

3.7 QuartLDetectorConstruction Class Reference

Inheritance diagram for QuartLDetectorConstruction:



Public Member Functions

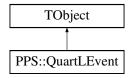
- G4VPhysicalVolume * Construct ()
- G4ThreeVector GetCellCenter (G4int station_id, G4int cell_id) const

The documentation for this class was generated from the following file:

· detectors/include/QuartLDetectorConstruction.hh

3.8 PPS::QuartLEvent Class Reference

Inheritance diagram for PPS::QuartLEvent:

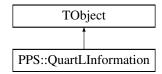


The documentation for this class was generated from the following file:

· detectors/include/QuartLEvent.h

3.9 PPS::QuartLInformation Class Reference

Inheritance diagram for PPS::QuartLInformation:



Public Member Functions

- void SetRunId (int ri)
- int GetRunId () const
- void SetProtonEnergy (double pe)
- double GetProtonEnergy () const

Public Attributes

ClassDef(QuartLInformation,
 1) private double fProtonEnergy

The documentation for this class was generated from the following file:

· detectors/include/QuartLInformation.h

3.10 RunAction Class Reference

Inheritance diagram for RunAction:



Public Member Functions

- RunAction (QuartLAnalyzer *analyzer=0)
- void BeginOfRunAction (const G4Run *aRun)
- void **EndOfRunAction** (const G4Run *aRun)
- QuartLAnalyzer * GetAnalyzer ()

Returns a pointer to the QuartLAnalyzer object used to collect all tracks' information in an external ROOT tree.

The documentation for this class was generated from the following file:

• sw/include/RunAction.hh

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3.11 StackingAction Class Reference

Inheritance diagram for StackingAction:



Public Member Functions

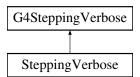
- G4ClassificationOfNewTrack ClassifyNewTrack (const G4Track *aTrack)
 Method to be run on every new track in the iterative tracking.
- · void NewStage ()
- void PrepareNewEvent ()

The documentation for this class was generated from the following file:

· sw/include/StackingAction.hh

3.12 Stepping Verbose Class Reference

Inheritance diagram for SteppingVerbose:



Public Member Functions

- void StepInfo ()
- void TrackingStarted ()

The documentation for this class was generated from the following file:

• sw/include/SteppingVerbose.hh